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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,193	10/16/2001	Jonas Persson	027557-069	3197

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
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2638

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,193

Applicant(s)

PERSSON, JONAS

Examiner

Lawrence B Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4,5,9,10,13,16,19,20,22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4,5,9,10,13,16,19,20,22 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 12 April 2005 have been fully considered but they are not persuasive. Examiner acknowledges applicants arguments on the limitation of "the respective time delays being determined such that respective differences between detected and delayed phase and amplitude signals are minimized". The cited prior art Suga et al. discloses a nonlinear compensator. In his invention Suga et al. discloses a "distortion correction section sequentially selects the amplitude, the phase and the amount of compensation corresponding to the value of the amplitude from the amounts of compensation registered at the initial stage and updated adaptively, and adds the amount of compensation to the digital base band signal obtained at the input demodulation section to compensate for the distortion components" (abstract). Examiner respectfully insists that Suga et al. in this disclosure discloses that the delays are used to compensate or minimize the difference between the delayed and detected signals of his system (col. 2, lines 2-54). Therefore, the previous rejection of claims 4-5, 9-10, 13, 16, 19-20, 22 and 24 under 35 U.S.C. 102(e) is maintained.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the

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international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 4-5, 9-10, 13, 16, 19-20, 22 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Suga et al. (US Patent 6,771,708 B1).

(1) With regard to claim 4, Suga et al. discloses in Fig(s). 2 and 4, a method of adjusting timing of amplitude and phase components in an output RF signal, the method comprising: generating amplitude and phase signals from input data; adjusting the generated amplitude and phase signals to produce adjusted amplitude and phase signals; supplying the adjusted amplitude and phase signals to a radio frequency circuit; and transmitting an output RF signal from the radio frequency circuit, wherein adjusting the generated amplitude and phase signals comprises: detecting an output RF signal to produce detected amplitude and phase signals; subjecting the generated phase signal to a first time delay (31) to produce a delayed phase signal, the first time delay being such as to minimize a difference between the delayed phase signal and the detected phase signal; subjecting the generated amplitude signal to a second time delay (32) to produce a delayed amplitude signal, the second time delay being such as to minimize the difference between the delayed amplitude signal and the detected amplitude signal; and adjusting the generated amplitude and phase signals in dependence upon the first and second time delays (abstract; col. 4, line 11-col. 5, line 54).

(2) With regard to claim 5, claim 5 inherits all limitations of claim 4 above. Furthermore, Suga et al. also discloses in Fig. 3, wherein the adjusted amplitude and phase signals are converted to inphase and quadrature (I and Q) signals (I1, Q1) for supply to the radio frequency circuit.

(3) With regard to claim 9, Suga et al. discloses in Fig(s). 2 and 4, a method of adjusting timing of inphase and quadrature (I and Q) components in an output RF signal, the method comprising: generating inphase and quadrature (I and Q) signals from input data; adjusting the generated inphase and quadrature (I and Q) to produce adjusted inphase and quadrature (I and Q) signals; supplying the adjusted inphase and quadrature (I and Q) signals to a radio frequency circuit; and transmitting an output RF signal from the radio frequency circuit, wherein adjusting the generated inphase and quadrature (I and Q) signals comprises: detecting an output RF signal to produce detected inphase and quadrature (I and Q) signals; subjecting the generated inphase (I) signal to a first time delay (31) to produce a delayed inphase (I) signal, the first time delay being such as to minimize a difference between the delayed inphase (I) signal and the detected inphase (I) signal; subjecting the generated quadrature (Q) signal to a second time delay (32) to produce a delayed quadrature (Q) signal, the second time delay being such as to minimize the difference between the delayed quadrature (Q) signal and the detected quadrature (Q) signal; and adjusting the generated inphase and quadrature (I and Q) signals in dependence upon the first and second time delays (abstract; col. 4, line 11-col. 5, line 54).

(4) With regard to claim 10, claim 10 inherits all limitations of claim 9 above. Furthermore, Suga et al. also discloses wherein the adjusted inphase and quadrature (I and Q) are converted to phase and amplitude signals for supply to the radio frequency circuit (abstract; col. 2, lines 14-24).

(5) With regard to claim 13, Suga et al. discloses in Fig(s). 2 and 4, an apparatus for adjusting timing of phase and amplitude components of an RF signal, the apparatus comprising: an RF detector unit (A, B) for detecting an RF signal and operable to

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produce detected phase and amplitude signals therefrom; an adjustment unit (17, 27) connected to receive generated phase and amplitude signals and operable to output adjusted phase and amplitude signals in dependence upon received adjustment control signals; a delay unit (C) connected to receive the generated phase and amplitude signals and operable to delay those signals by respective time delays to produce delayed phase and amplitude signals, the respective time delays being determined such that respective differences between detected and delayed phase and amplitude signals are minimized; and a delay calculation unit (47) which is operable to generate adjustment control signals in dependence upon the respective time delays and to supply the adjustment control signals in dependence upon respective time delays and to supply the adjustment control signals to the adjustment unit.

(6) With regard to claim 16, claim 16 inherits all limitations of claims 9 and 14 above.

(7) With regard to claim 19, claim 19 inherits all limitations of claim 13 above. While Suga et al. is silent as to a mobile communication device, he does disclose his invention for compensating for the non-linear distortion characteristic of an amplifier in a transmitting system. This would inherently include a mobile communications transmitter as well as any other transmitter comprising an amplifier with non-linearity characteristics.

(8) With regard to claim 20, claim 20 inherits all limitations of claims 4 and 19 above.

(9) With regard to claim 22, claim 22 inherits all limitations of claims 9 and 20 above.

(10) With regard to claim 24, claim 24 inherits all limitations of claims 16 and 23 above.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

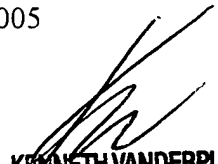
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw

June 22, 2005



KENNETH VANDERPUYE
PRIMARY EXAMINER